WASTE MANAGEMENT

WASTE MANAGEMENT
OF ILLINOIS
601 Madison Road
E. St. Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

July 24, 2014

Illinois Environmental Protection Agency
Bureau of Air – Compliance Section #40
1021 North Grand Avenue East
Springfield, Ill 62702

163075AAL – St. Clair County
Cottonwood Hills Recycling and Disposal Facility

NSPS Semi-Annual Report for Period January 1, 2014 to June 30, 2014

Dear Sirs:

This letter transmits the NSPS Semi-Annual Report for the above referenced reporting period at the above referenced facility.

If you have any questions or require additional information, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE
District Engineer

cc: IEPA – Collinsville Field Office
2009 Mall Street
Collinsville, Illinois 62234

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation: _____

COMPLIANCE AND GENERAL REPORTING FORM

FOR AGENCY USE ONLY
ID NUMBER:
PERMIT #:
DATE:

THIS FORM IS USED FOR EITHER OF THE FOLLOWING:

- TO REPORT AND CERTIFY COMPLIANCE OF AN ENTIRE SOURCE OR SPECIFIC ITEMS OF EQUIPMENT WITH ALL APPLICABLE REQUIREMENTS DURING A REPORTING PERIOD, OR
- TO IDENTIFY AND ENSURE PROPER PROCESSING OF A SUBMITTED REPORT. THIS FORM SHOULD BE USED AS THE COVER SHEET OF THE SUBMITTED REPORT.

SOURCE INFORMATION

1) SOURCE NAME:
Cottonwood Hills Recycling and Disposal Facility

2) DATE FORM PREPARED:	3) SOURCE ID NO. (IF KNOWN):
July 2014	**163075AAL**

GENERAL INFORMATION

4) INDICATE FOR WHICH OF THE FOLLOWING THIS FORM IS BEING COMPLETED:

☒ **TO REPORT AND CERTIFY COMPLIANCE OF THE SOURCE OR SPECIFIC ITEMS OF EQUIPMENT WITH ALL APPLICABLE REQUIREMENTS**

☐ **TO IDENTIFY AND ENSURE PROPER PROCESSING OF A SUBMITTED REPORT**

5) PERIOD COVERED BY THIS REPORT:

FROM: 01 / 01 /2014 TO: 06/ 30 / 2014

6) NAME AND PHONE NUMBER OF PERSON TO CONTACT FOR QUESTIONS REGARDING THIS REPORT:

NAME: **Ernest Dennison** TITLE: **District Engineer**

PHONE#: **(314) 568-2025**

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

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_____

APPLICATION PAGE _____

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COMPLIANCE OF SOURCE OR EQUIPMENT DURING REPORTING PERIOD

- COMPLETE ITEM 7 BELOW IF THIS FORM IS BEING USED TO REPORT AND CERTIFY COMPLIANCE OF THE ENTIRE SOURCE.
- COMPLETE ITEM 8 BELOW IF THIS FORM IS BEING USED TO REPORT AND CERTIFY COMPLIANCE OF SPECIFIC ITEMS OF EQUIPMENT ONLY.

7) WAS THE SOURCE IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS FOR THE ENTIRE REPORTING PERIOD? [X] YES [ ] NO

IF YES, THEN THE "REPORT INFORMATION" SECTION ON PAGE 3 OF THIS FORM DOES NOT NEED TO BE COMPLETED.

IF NO, THEN COMPLETE AND SUBMIT FORM CAAPP-405 -"EXCESS EMISSIONS, MONITORING EQUIPMENT DOWNTIME, AND MISCELLANEOUS REPORTING FORM."

8a) LIST THE EMISSION UNIT(S) AND CONTROL EQUIPMENT FOR WHICH THIS FORM IS BEING COMPLETED TO REPORT AND CERTIFY COMPLIANCE WITH (IF ADDITIONAL SPACE IS NEEDED FOR ITEM 10, ATTACH AND LABEL AS EXHIBIT 400-A):

See Attached Report.

b) IDENTIFY THE APPLICABLE REQIREMENT(S) FOR WHICH THIS FORM IS BEING USED TO REPORT AND CERTIFY COMPLIANCE WITH:

See Attached Report.

c) IDENTIFY THE APPLICABLE REQIREMENT(S) WHICH REQUIRE THAT THIS REPORT OR CERTIFICATION BE SUBMITTED:

Semi-Annual NSPS Report

d) WERE THE ABOVE REFERENCED ITEMS IN 8(a) IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS FOR THE ENTIRE REPORTING PERIOD? [X] YES [ ] NO

IF YES, THEN THE "REPORT INFORMATION" SECTION ON PAGE 3 OF THIS FORM DOES NOT NEED TO BE COMPLETED.

IF NO, THEN COMPLETE AND SUBMIT FORM CAAPP-405 - "EXCESS EMISSIONS, MONITORING EQUIPMENT DOWNTIME, AND MISCELLANEOUS REPORTING FORM."

WM01522

REPORT INFORMATION

9) TITLE OF REPORT BEING SUBMITTED:

NSPS Semi-Annual Report

10) IDENTIFY THE APPLICABLE REQIREMENT(S) WHICH REQUIRES THIS REPORT (IF APPLICABLE):

40 CFR 60.757(f) NSPS

11) BRIEFLY EXPLAIN WHAT THIS REPORT COVERS:

This Semi-Annual NSPS Report is a summary of any exceedences of monitored parameters, periods of downtime for gas collection/control devices, and any expansions/modifications to the gas collection system.

12) ATTACH THE REPORT TO THIS FORM.

See Attached Report

SIGNATURE BLOCK

NOTE: THIS CERTIFICATION MUST BE SIGNED BY A RESPONSIBLE OFFICIAL. APPLICATIONS WITHOUT A SIGNED CERTIFICATION WILL BE RETURNED AS INCOMPLETE.

13) I CERTIFY UNDER PENALTY OF LAW THAT, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION CONTAINED IN THIS APPLICATION ARE TRUE, ACCURATE AND COMPLETE.

AUTHORIZED SIGNATURE:

BY: _____
AUTHORIZED SIGNATURE

DISTRICT ENGINEER
TITLE OF SIGNATORY

ERNEST H DENNISON
TYPED OR PRINTED NAME OF SIGNATORY

7 / 24 / 14
DATE

APPLICATION PAGE _____

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400-CAAPP

WM01523

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation: _____

DELEGATION OF AUTHORITY FOR RESPONSIBLE OFFICIAL TO A REPRESENTATIVE

FOR AGENCY USE ONLY
ID NUMBER:
PERMIT #:
DATE:

THIS FORM SHALL BE USED BY A RESPONSIBLE OFFICIAL TO DELEGATE AUTHORITY TO A REPRESENTATIVE OF SUCH PERSON FOR SIGNATURE ON APPLICATIONS OR CERTIFICATION OF REPORTS TO BE SUBMITTED PURSUANT TO THE CLEAN AIR ACT.

THIS FORM SHALL ONLY BE USED FOR A CORPORATION AT WHICH A PRESIDENT, SECRETARY, TREASURER, OR VICE-PRESIDENT OF THE CORPORATION IN CHARGE OF BUSINESS FUNCTION, OR ANY OTHER PERSON WHO PERFORMS SIMILAR POLICY OR DECISION MAKING FUNCTIONS FOR THE CORPORATION TO TRANSFER THE AUTHORITY AS A RESPONSIBLE OFFICIAL TO A REPRESENTATIVE OF SUCH PERSON. THE REPRESENTATIVE OF SUCH PERSON MUST BE RESPONSIBLE FOR THE OVERALL OPERATION OF ONE OR MORE MANUFACTURING, PRODUCTION, OR OPERATING FACILITIES APPLYING FOR OR SUBJECT TO A PERMIT.

NOTE: THIS TRANSFER OF DELEGATION OF AUTHORITY IS APPLICABLE ONLY IF THE FACILITY EMPLOYS MORE THAN 250 PERSONS OR HAS A GROSS ANNUAL SALES OR EXPENDITURES EXCEEDING $25 MILLION (IN SECOND QUARTER 1980 DOLLARS).

SOURCE INFORMATION

1) SOURCE NAME: Cottonwood Hills Recycling and Disposal Facility

2) DATE FORM PREPARED:	3) SOURCE ID NO. (IF KNOWN):
2/3/14	163075AAL

TRANSFER OF AUTHORITY

4) I, THE UNDERSIGNED, BEING A PRESIDENT, SECRETARY, TREASURER, OR VICE-PRESIDENT OF THE CORPORATION IN CHARGE OF BUSINESS FUNCTION, OR OTHER PERSON WHO PERFORMS SIMILAR POLICY OR DECISION MAKING FUNCTIONS FOR THE CORPORATION, HEREBY TRANSFER THE AUTHORITY AS A RESPONSIBLE OFFICIAL TO Ernest H Dennison, THEY BEING A REPRESENTATIVE AND RESPONSIBLE FOR THE OVERALL OPERATION OF ONE OR MORE MANUFACTURING, PRODUCTION, OR OPERATING FACILITIES APPLYING FOR OR SUBJECT TO A PERMIT.

AUTHORIZED SIGNATURE	Vice President and Assistant Secretary TITLE OF SIGNATORY
Dennis M. Wilt TYPED OR PRINTED NAME OF SIGNATORY	2 / 3 / 14 DATE
Ernest H Dennison DELEGATED REPRESENTATIVE	District Engineer TITLE OF DESIGNATED REPRESENTATIVE

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

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_____

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WM01524

COTTONWOOD HILLS
RECYCLING AND DISPOSAL FACILITY

NSPS SEMI-ANNUAL REPORT

For the Reporting Period
01/01/14 to 06/30/14

Prepared By
Waste Management of Illinois, Inc.

July 2014

1.0 Introduction

This document consists of the semi-annual report for Cottonwood Hills Recycling and Disposal Facility in Marissa, Illinois and has been prepared in accordance with 40 CFR 60.757(f). This report covers the period of gas system operations from January 1, 2014 to June 30, 2014.

Documented in this report are exceedances of monitored parameters under 40 CFR 60.756, periods of downtime for gas collection/control devices, and any expansions/modifications to the gas collection system during the reporting period. The report is organized into three main sections: Collection systems, Control Devices and Landfill.

The gas collection system currently in place at the site consists of 22 vertical gas collection wells and temporary gas collection trenches. The wells and trenches are connected to the gas collection laterals and header pipe which leads to a 3000 scfm open flare (control device).

The gas mover equipment is comprised of a blower at the flare station.

2.0 Collection System Summary

2.1 Exceedance of Monitored Parameters

Gauge Pressure at each Gas Collection Wellhead (40 CFR 60.756 (a)(1))

- Report all instances of positive pressure measured at the gas collection header of each individual wellhead, including value and length of time measured.
- Per 40 CFR 60.753 (b), record instances when positive pressure occurred at a wellhead in an effort to avoid a landfill fire.

Based on a review of the data, any positive pressure exceedances which were detected had a corrective action (adjusted wellhead vacuum) initiated within 5 days and was fixed within 15 days, or have a variance request (approved or pending), or had the well and/or system header repaired/replaced within 120 days (system expansion). Therefore, these wells are considered to be in compliance (See Exceedence Report in Attachment 1). Please note variance requests were made during the reporting period for an alternative operating procedure for low flow wells rather than requesting decommissioning the well (See Attachment 2).

Monthly Oxygen or Nitrogen Concentration at Each Gas Collection Wellhead (40 CFR 60.756(a)(2))

- Report all instances, on a per well basis, when nitrogen concentrations exceeded 20% or oxygen concentrations exceed 5%. Report date, value and length of time of each exceedance.
- Detail action taken within 5 days to correct exceedance. Report date that exceedance was corrected (must be less than 15 days).

Based on a review of the data, any oxygen reading in excess of the regulatory limits of 5% had a corrective action (adjusted wellhead vacuum) initiated within 5 days and was fixed within 15 days, or have a variance request (approved or pending), or had the well and/or system header repaired/replaced within 120 days (system expansion). Therefore, these wells are considered to be in compliance (See Exceedence Report in Attachment 1). Please note variance requests were made during the reporting period for an alternative operating procedure for low flow wells rather than requesting decommissioning the well (See Attachment 2).

Temperature of the landfill gas at each wellhead (40 CFR 60.756(a)(3))

- Report all instances, on a per well basis, when landfill gas temperature exceeded 55°C (131°F).
- Detail action taken within 5 days to convert exceedance. Report date that exceedance was corrected (must be less than 15 days).

There were multiple instances of a temperature exceeding 131°F as measured at the wellhead during the reporting period (See Exceedence Report in Attachment 1). These wells have received USEPA approved temperature variances (or pending variance requests) or had the well and/or system header repaired/replaced within 120 days (system expansion). Therefore, these wells are considered to be in compliance. See Attachment 2 for a table of approved variances or any variance requests submitted during this reporting period.

2.2 Record of Operation

Description and duration of all periods when the gas stream from the collection system was diverted from the control device through a bypass line (40 CFR 60.756(b)(2)) for enclosed flare, engines or turbines, or 40 CFR 60.756(c) for utility flares).

The gas collection system at Cottonwood Hills RDF does not have a bypass line. Therefore, there were no periods of time that flow was diverted through a bypass line. All flow was directed to the permitted control device (open flare).

Description and duration of all periods when the collection system was not operating for more than 5 days.

There was no period of time during which the collection system was not operating for more than 5 days during the reporting period.

2.3 Record of Expansion

Date and location of all newly installed wells or collection system expansion (40 CFR 60.757(f)(6)).

There was one replacement gas collection well (MW03R) installed during the reporting period (See Attachment 3).

3.0 Control Device Summary

3.1 Monitored Parameters

Flare Flame (Utility Flare)

- Report all periods of flare flame absence (40 CFR 60.758(c)(4)).

The open flare at Cottonwood Hills RDF is equipped with a thermocouple to continuously determine that a flame is present via temperature. Upon loss of flame (drop in temperature), the thermocouple automatically shuts down the blower.

In addition, the blower inlet control valve is automatically closed to prevent uncontrolled discharge. The lack of a flame at the flare is not indicative of an emissions exceedance, since the system will not operate when a flame is not present.

Flow (Utility Flare)

- Report all periods during which the control device was not operating for more than one hour; report duration of each event (40 CFR 60.757(f)(3)).

A Table of periods when the control device (open flare) was not operating for more than one hour is provided in Attachment 4. No raw landfill gas was emitted through the control device during the downtime. Therefore, the control device did not allow emissions of raw landfill gas for more than one hour.

3.2 Performance Testing

Performance Test (Utility Flare)

- Complete initial/annual performance test on the open flare in accordance with IEPA-BOA Construction Permit application number 06100058.

The performance test for 2013 was submitted on December 4, 2013. The performance test for 2014 will be submitted in the Fall of 2014.

4.0 Landfill Summary

4.1 Monitored Parameters

Surface Scan

- Report the location of each exceedance of the 500 ppm methane concentration, and the concentration recorded at each exceedance location (40 CFR 60.757(f)(5)).

The quarterly methane surface scans were conducted at the facility as required. A Table of exceedances is provided in Attachment 5. Any exceedances were corrected and re-monitored within the required timeframes.

Semi-Annual Sampling/Analysis

- Perform semi-annual sampling and analysis of landfill gas entering the control system in accordance with IEPA-BOA application number 06100058.

Sampling and analysis of the landfill gas is conducted in conjunction with the performance test for the flare. The results are submitted with the flare performance test report.

ATTACHMENT 1

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
WELLHEAD PERFORMANCE COMPLIANCE AND CORRECTIVE ACTION
FOR JANUARY 1, 2014 to JUNE 30, 2014 REPORTING PERIOD

Well	Date	Temp	Pw	CH4%	CO2%	O2%	Date	Corrective Action	Temp	Pw	CH4%	CO2%	O2%	CO
MW03	01/30/14	52	-1.4	62.0	37.8	0.0			72	-1.7				
MW03	02/25/14	94	-7.8	0.1	0.6	20.8	02/25/14	Well Damaged - scheduled replacement	83	-2.9				
MW03	02/25/14	72	-2.1	0.0	0.4	20.9	02/25/14	Well Damaged - scheduled replacement	68	-2.1				
MW03	03/04/14	71	-2.3	0.0	0.3	21.7	03/04/14	Well Damaged - scheduled replacement	65	-1.7				
MW03	03/13/14	53	-2.9	0.2	1.4	21.1	03/13/14	Well Damaged - scheduled replacement	51	-2.9				
MW03	04/01/14	75	-2.4	0.1	0.3	21.3	04/01/14	Well Damaged - scheduled replacement	72	-2.3				
MW03	04/29/14	80	-1.6	0.7	1.9	21.0	04/29/14	Well Damaged - scheduled replacement	80	-1.6				
MW03	05/30/14	**MW03 replaced by new landfill gas collection well MW03R on 05/30/14**												
MW03R	06/02/14	96	-5.9	3.4	2.5	19.4	06/02/14	Wellhead Pw adjusted	89	-3.5				
MW03R	06/10/14	94	-3.6	0.0	0.3	21.3	06/10/14	Wellhead Pw adjusted	91	-2.6				
MW03R		**Variance request was sent to USEPA on 07/22/14 for alternative operating proceedure ("burping") of well**												
MW07R1	03/13/14	127	-19.3	20.5	18.7	11.7	03/13/14	Wellhead Pw adjusted	103	-7.1				
MW07R1	04/01/14	69	-4.6	38.1	31.5	4.7	04/01/14	Well Oxygen below regulatory limit	64	-4.3				
MW07R1		**Variance request was sent to USEPA on 05/13/14 for alternative operating proceedure ("burping") of well**												
MW07R1	05/27/14	91	-8.9	49.1	37.9	1.1	05/27/14	Well Oxygen below regulatory limit	98	-8.6				
MW07R1	06/16/14	94	-8.3	52.2	41.2	0.0	06/16/14	Well Oxygen below regulatory limit	95	-8.5				
MW11	05/27/14	89	-2.7	23.3	19.3	11.1	05/27/14	Wellhead Pw adjusted	89	-0.8				
MW11	06/10/14	82	-5.0	59.1	40.8	0.0	06/10/14	Well Oxygen below regulatory limit	83	-5.2				
MW19		**USEPA approved variance of 144 F on 10/31/13**												
MW19	12/04/13	131	8.1	60.2	39.7	0.0	12/04/13	Header Damaged - scheduled repair	127	8.7				
MW19	01/30/14	136	-33.0	48.5	40.2	0.0	01/30/14	Header Replaced/Repaired	136	-33.0				
MW77	05/27/14	132	-20.7	57.0	39.7	0.0	05/27/14	Wellhead Pw adjusted, Temp reduced	130	-17.2				
MW79	01/30/14	121	1.4	56.5	42.8	0.0	01/30/14	Wellhead Pw adjusted, header fixed	122	1.4				
MW79	02/25/14	125	-35.6	54.6	45.3	0.0	02/25/14	Well under negative pressure (vaccuum)	125	-35.5				
MW80R	01/30/14	132	-5.1	56.8	43.1	0.0	01/30/14	Wellhead Pw adjusted, Temp reduced	130	-2.1				10
MW80R	02/25/14	123	-4.9	58.3	41.6	0.0	02/25/14	Well Temperature below regulatory limit	126	-5.9				
MW80R	03/13/14	127	-1.0	58.1	41.8	0.0	03/13/14	Well Temperature below regulatory limit	128	-1.3				
MW80R	04/29/14	128	-0.6	57.0	42.9	0.0	04/29/14	Well Temperature below regulatory limit	128	-0.9				
MW80R	05/27/14	128	-3.0	57.9	40.0	0.0	05/27/14	Well Temperature below regulatory limit	126	-1.9				
MW80R	06/16/14	137	-4.2	56.7	42.7	0.0	06/16/14	Wellhead Pw adjusted	140	-1.4				
MW80R	06/16/14	140	-1.1	57.3	42.6	0.0	06/16/14	Wellhead Pw adjusted	140	-0.7				
MW80R	07/01/14	143	-16.4	58.0	41.9	0.0	07/01/14	Wellhead Pw adjusted	137	-0.2				50
MW80R		**Variance request was sent to USEPA on 07/03/14 for permanent temperature variance of 143 F**												
MW81	03/13/14	83	-2.6	4.0	7.7	16.2	03/13/14	Wellhead Pw adjusted	82	-1.3				
MW81	03/17/14	63	-1.0	51.0	37.9	0.9	03/17/14	Well Oxygen below regulatory limit	69	-1				
		Variance request was sent to USEPA on 05/13/14 for alternative operating proceedure ("burping") of well												
MW81	05/27/14	129	-1.1	24.7	19.4	8.5	05/27/14	Wellhead Pw adjusted	121	-1.1				
MW81	06/10/14	81	-1.3	54.9	40.2	0.2	06/10/14	Well Oxygen below regulatory limit	97	-1.3				

Action shall be initiated to correct the exceedence within 5 calendar days. If correction of the exceedence can not be achieved within 15 calendar days of the first measurement, the gas system shall be expanded if temperature exceeds 55 Celcius, wellhead pressure Pw is positive, Nitrogen is 20% or above, or Oxygen is 5% or above.

ATTACHMENT 2

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
USEPA GAS WELL VARIANCE APPROVALS AND REQUESTS

Gas Well	Approved Temp	USEPA Approval Date
MW07R1	145 F	10/31/13
MW08	141 F	10/31/13
MW09R	141 F	10/31/13
MW10R	145 F	10/31/13
MW17	147 R	10/31/13
MW19	144 R	10/31/13
MW80R	143 R	Requested 07/03/14
MW03R	Request Alt Op Procedure	Requested 07/22/14
MW07R1	Request Alt Op Procedure	Requested 05/13/14
MW81	Request Alt Op Procedure	Requested 05/13/14

WASTE MANAGEMENT

WASTE MANAGEMENT
OF ILLINOIS
601 Madison Road
E. St. Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

July 22, 2014

Ms. Sarah Breneman, Chief
USEPA (AE-17J) – Air & Radiation Division
Air Enforcement and Compliance Assurance Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Cottonwood Hills Recycling and Disposal Facility - Site I.D. No. 163075AAL
Request for Alternative Operating Procedure for Gas Extraction Well MW03R

Dear Ms. Breneman:

This letter is written to request USEPA approval of an alternative operating procedure for landfill gas extraction wells with low flow due to minimal gas generation in certain areas of the landfill. This procedure would be used as an alternative to decommissioning the wells. This procedure has been previously approved by the USEPA Region 4 (please see attached documentation). A request for this procedure was previously submitted to the USEPA on May 13, 2014 for this facility for wells MW07R1 and MW81. This request is for landfill gas extraction well MW03R.

Background

Some areas of a landfill can have low gas generation rates due to factors such as low fill heights, type of waste present such as contaminated soils or other waste streams with minimal decomposable organics that would generate landfill gas. Landfill gas extraction wells installed in areas of the landfill with low gas generation rates are often difficult, if not impossible, to simultaneously operate at a negative pressure and maintain compliance with oxygen concentrations. When gas generation/flow rates are so low that even applying minimal vacuum results in air infiltration that causes exceedences of the applicable oxygen concentration limit of 5%. Shutting such wells down will prevent the air infiltration that causes the oxygen exceedence, but will also likely cause a positive pressure in the well as even minimal gas generation can lead to gas buildup in the well.

Request for Gas Well MW03R

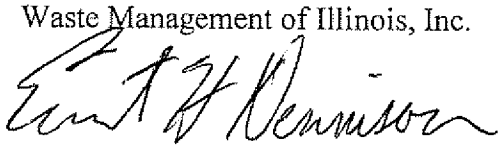
In lieu of a request to permanently shut down a landfill gas extraction well as allowed by 40 CFR 60.753(b)(3), this letter requests USEPA approval of an alternative operating procedure for landfill gas extraction well MW03R at the Cottonwood Hill Recycling and Disposal Facility. Well MW03R was recently installed (See attached installation log) to

replace well MW03 in an area of the landfill of low gas generation. The replacement well also has minimal gas flow and can easily cause air infiltration with minimal applied vacuum (see attached data tables). Therefore, the facility requests approval of the following operating procedure:

1. Wells where oxygen concentrations do not decline to acceptable levels after more than one hour or reduced vacuum will be shut off until the gas quality recovers.
2. The monthly monitoring required by 40 CFR 60.755 will be conducted for wells that have been shutdown, but positive pressure or elevated oxygen concentrations will not be considered exceedences of the operating limits in 40 CFR 60.753.
3. If monthly monitoring indicates that pressure has built up in the well and the oxygen concentration still exceeds 5%, the well will be opened to apply vacuum and relieve the pressure and it will be shutdown until it is monitored again the following month.
4. If the monthly monitoring indicates that gas flow and/or quality has improved (ie the oxygen concentration has dropped below 5% with vacuum applied), the well will be brought back online and maintained under vacuum until gas quality declines again.
5. The facility will continue to conduct quarterly surface scans as required under 40 CFR 60.755 including areas with wells using this operating procedure. The standard procedures and remediation steps will be taken for any surface scan readings that exceed 500 ppm.

If you require additional information or have any questions, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.



Ernest H Dennison, PE.
District Engineer

Cc: IEPA-BOA-Compliance and Enforcement Section
1021 North Grand Avenue East
Springfield, Illinois 62702

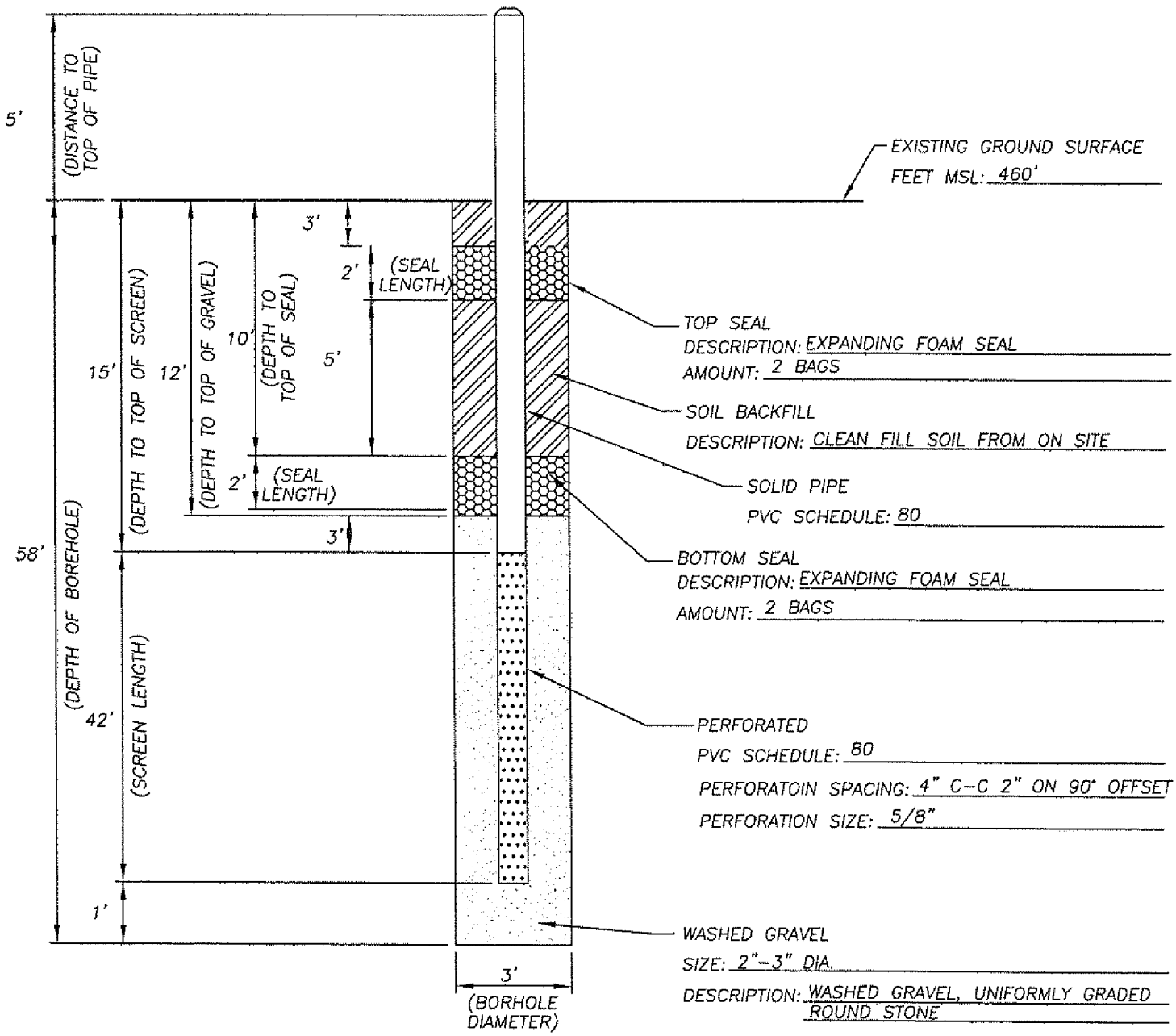
COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW03R

Well	Date	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW03R	6/2/2014 10:56	3.4	2.5	19.4	-5.9	96	89	-3.5	40	18	
MW03R	6/10/2014 9:29	0.0	0.3	21.3	-3.6	94	91	-2.6	20	15	

GAS WELL CONSTRUCTION DIAGRAM

PROJECT NUMBER: 0086-440-10-07
PROJECT NAME: COTTONWOOD HILLS 2014 GCCS CQA
GAS WELL NO.: MW03R
WELL LOCATION: 611179E 580207N
INSTALLATION START DATE: 5/30/14
COMPLETION DATE: 5/30/14
DRILLER: COLEMAN AND SON
INSPECTOR: JACOB ALLEN

COMMENTS: DRILLING TERMINATED AT DRILL DEPTH OF 58'.



WM01537

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4APT-ATMB

FEB 09 2005

L. T. Kozlov, P.E.
Program Administrator
Air Resources Management
Central District
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Dear Mr. Kozlov:

The purpose of this letter is to provide you with a written determination regarding proposed changes to the standard operating procedures for landfill gas extraction wells at the Orange County Solid Waste Management Facility. This landfill is subject to 40 CFR Part 60, Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills), and in a request sent to the U.S. Environmental Protection Agency (EPA) Region 4 and to your agency, Orange County proposed changes in standard operating procedures for certain wells in the landfill's active gas collection system. These changes involve an alternative to decommissioning wells where low landfill gas generation rates make it difficult to simultaneously operate wellheads at negative pressure and maintain compliance with oxygen concentration limits. Based upon our review, the changes proposed by Orange County are acceptable. Details regarding the County's proposal and the basis for our conclusions are provided in the remainder of this letter.

Operating requirements for gas collection and control systems (GCCS) are promulgated at 40 CFR §60.753(b), (c), and (d). Under these provisions, wellheads must be operated under negative pressure, the temperature of interior wellheads must be less than 55 °C, gas quality limits for interior wells (either less than 20 percent nitrogen or less than five percent oxygen) must be met, and the methane concentration at the surface of the landfill must be less than 500 parts per million (ppm). Under provisions in 40 CFR §60.755, monitoring to verify compliance with the wellhead pressure, temperature, and gas quality limits must be conducted on a monthly basis. Monitoring to verify compliance with the 500 ppm surface methane concentration limit must be conducted on a quarterly basis.

Orange County's request for approval of changes to its standard operating procedures involves wells where gas flow rates are so low that applying even minimal vacuum results in air infiltration that causes exceedances of the applicable oxygen concentration limit. Shutting such wells down will prevent the air filtration that leads to the oxygen exceedances, but shutting a well down is likely to cause positive pressure in the wellhead as landfill gas builds up. Therefore, simultaneously complying with both

the negative pressure and oxygen concentration limits in 40 CFR §60.753 can be difficult for wells where gas flow rates have declined over time.

Under provisions in 40 CFR §60.753(b)(3), wells that experience positive pressure after being shutdown to accommodate declining landfill gas flow rates can be decommissioned if permission is granted by the Administrator. As an alternative to decommissioning wells under the provisions, Orange County has proposed to make the following changes to its standard operating procedure for wells where persistent oxygen exceedances are not the result of operations and/or maintenance issues:

1. Wells where oxygen concentrations do not decline to acceptable levels after more than one hour of reduced vacuum will be shut off until the gas quality recovers.

2. The monthly monitoring required by 40 CFR §60.755 will be conducted for wells that have been shutdown, but positive pressure or elevated oxygen concentrations will not be considered exceedances of the operating limits in 40 CFR §60.753.

3. If monthly monitoring indicates that pressure has built up in the well and the oxygen concentration still exceeds five percent, the well will be opened to relieve the pressure and will be shutdown until it is monitored the following month.

4. If the monthly monitoring indicates that gas quality has improved (i.e., the oxygen concentration has dropped below five percent), the well will be brought back on line until the gas quality declines again.

5. The quarterly methane surface concentration monitoring required under 40 CFR §60.755 will be conducted for wells that have been shutdown. Standard remediation steps, including evaluating the need to return wells to full-time service, will be followed if exceedances of the 500 ppm methane surface concentration limit are detected.

According to Mr. Daniel Morical of Orange County Utilities, the operating procedure changes outlined above would apply to approximately four or five of the 130 wells at its landfill at any one time. Mr. Morical also indicated that there is a high probability of gas quality improving to the point it would be necessary to restart wells that had been shutdown. Based upon our review, the proposed changes to Orange County's standard operating procedures are acceptable because shutting down nonproductive wells, instead of decommissioning them, has the potential to lower overall nonmethane organic compound (NMOC) emissions at the landfill. This potential increase in NMOC control system efficiency stems from the ability to quickly resume gas collection if there are improvements in the gas quality or increases in the gas production rate in an area of the landfill where wells have become nonproductive. If wells in a nonproductive area are decommissioned, instead of merely being shutdown, NMOC

emissions would not be controlled between the time an exceedance is identified and a new well is installed. One condition for approval of the proposed changes in standard operating procedures at the Orange County Solid Waste Management Facility is that facility diagrams must be updated to indicate which wells have been shutdown because landfill gas production rates are too low to permit continuous extraction.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides and Toxics
Management Division

cc: Daniel Morical
Orange County Utilities – Solid Waste Division
5901 Young Pine Road
Orlando, Florida 32829

Environmental Consultants

3012 U.S. Highway 30 North
Suite 700
Tampa, FL 33619-2242

813 621-0080
FAX 813 623-6757

SCS ENGINEERS

November 9, 2004
File No. 09199036.17

Mr. Dan Morrical, P.E.
Orange County Solid Waste Division
5901 Young Pine Road
Orlando, Florida 32829

Subject: Addendum to the Gas Collection and Control System Design Plan
Standard Operating Procedure for Landfill Gas Extraction Wells
Orange County Solid Waste Management Facility, Orange County, Florida
FDEP Permit No. 0950113-002-AV

Dear Dan:

SCS Engineers (SCS) is providing you this letter for your use in petitioning the United States Environmental Protection Agency (U.S. EPA) to amend the landfill gas collection and control system (GCCS) design plan for the Orange County Solid Waste Management Facility. A similar letter was previously sent to Orange County on December 30, 2003, which was subsequently forwarded to the Florida Department of Environmental Protection (FDEP) Central District office. FDEP recently stated that they did not have the regulatory authority to approve the proposed actions included in this request, and recommended that the County forward the following proposed standard operating procedures to U.S. EPA for their approval.

As you know, in accordance with the New Source Performance Standards (NSPS) for municipal solid waste landfills, Orange County is required to operate each landfill gas (LFG) extraction well in compliance with certain criteria. Per Title 40 of the Code of Federal Regulations (CFR) Part 60.753(b), (c), and (d), Orange County is required to:

- Operate the collection system with negative pressure at each wellhead except under certain conditions such as increased well temperature, when a geomembrane cap is installed and an acceptable pressure limit is specified in the GCCS design plan, or when a landfill fire is present.
- Operate each wellhead with a LFG temperature less than 55 degrees Celsius (131 degrees Fahrenheit) and either a nitrogen level less than 20 percent or an oxygen concentration less than 5 percent by volume.
- Operate the GCCS so that the methane concentration at the surface of the landfill is less than 500 parts per million by volume (ppmv).

The first and third criteria listed above were included in the NSPS by the U.S. EPA in order to require landfill owners/operators to minimize fugitive emissions of LFG to the atmosphere. The second criterion, which is related to oxygen and nitrogen concentration in the gas at each well, is based on historical LFG industry operations and maintenance guidelines aimed at

reducing the potential for landfill fires or negatively affecting microbes involved in the anaerobic decomposition of the waste. High oxygen concentrations can occur due to operating the wellfield too aggressively, resulting in the infiltration of ambient air through the cover soils. If the oxygen concentration within a landfill exceeds five percent by volume, the possibility of a landfill fire is greatly enhanced. Note that because most field instruments measure oxygen, and not nitrogen, the method of compliance typically is based on a five percent oxygen concentration, rather than the 20 percent nitrogen requirement at each wellhead.

Unfortunately, the Rule does not provide guidance on how to address an individual criterion when it has the potential to conflict with one of the other criteria. For example, in some situations it may not be possible to maintain compliance with both the vacuum and gas quality requirements of the NSPS. This may be true in the case of a low or diminishing LFG generation rate, when the application of even a small vacuum (i.e., 0.1 to 0.5 inches of water column (in-w.c.)) to a well or collector may cause the oxygen concentration to exceed the NSPS limit of five percent. This typically occurs because LFG is not being generated at a sufficient rate to allow for continuous extraction by the GCCS.

If the LFG generation rate is so low, applying vacuum typically will only worsen the gas quality (i.e., increase the oxygen content), resulting in continued oxygen exceedances. One approach to remedying this situation is to shut down the well for a period of time until gas quality improves and the oxygen concentration declines to below five percent. Once the oxygen concentration is below this level, the well can be reopened and LFG extraction resumed. However, because this approach requires a non-negative pressure at the wellhead, this technique is not compliant with the NSPS.

Therefore, if gas quality cannot be maintained, the only alternative allowed by the NSPS is to decommission the well, provided there are no exceedances of the surface emissions monitoring limit. While such wells could be decommissioned, SCS feels it would be better to leave them in place in case future conditions render them necessary.

PROPOSED STANDARD OPERATING PROCEDURE

SCS proposes to establish the following standard operating procedure for wells at which poor gas quality is consistently recorded despite the application of minimal vacuum (i.e., less than 0.5 in-w.c.). This standard operating procedure is proposed as an addendum to the existing GCCS design plans for the site. It is not intended for wells at which normal wellfield tuning, maintenance, or repair activities can remediate the exceedances.

For wells at which oxygen exceedances are persistent and not the result of operations and/or maintenance issues, the wellhead valve will be adjusted to minimize vacuum. If after more than one hour of decreased vacuum the oxygen concentration does not decline to allowable levels, the wellhead will be shut off until the gas quality recovers. The well will continue to be monitored on a monthly basis, and the wellhead valve opened to purge any accumulated gas

and relieve any pressure that may have developed. If, during the routine monthly monitoring, the oxygen concentration is below five percent, the well will be brought back on line until the gas quality again declines.

Gas concentration and pressure will continue to be monitored and recorded during the months in which the wells are shut off. However, a zero pressure or high oxygen concentration will not be considered an exceedance of the wellhead operating criteria included in 40 CFR 60.753(b) and (c), and remedial actions including rechecks will not be required. If a positive pressure is recorded, the well will be reopened to relieve any pressure and to purge the accumulated gas from the well. If the gas quality has improved, the well will be opened and returned to service. However, if high oxygen concentrations are still present in the well, after purging the well and removing any positive pressure, the wellhead valve will again be closed and the well will not be monitored until the next round of monthly monitoring. Quarterly surface emissions monitoring will continue to be used to demonstrate the effective capture and control of LFG from the landfill. In the case of exceedance of the 500-ppmv surface emissions monitoring limit, standard remediation steps will be conducted, including evaluating the need for returning the well to full-time service.

Note that wells under this standard operating procedure will not be physically disconnected from the GCCS, which will allow the County to quickly return the wells to service if the need arises. In the future, if wells are to be permanently decommissioned, the County will submit a formal notice of well decommissioning to FDEP.

Please forward this proposed standard operating procedure/addendum to the GCCS design plan to the U.S. EPA at the following address:

Air Resources Management
United States Environmental Protection Agency, Region
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-3104

Please copy the FDEP Central District office at the following address:

Air Resources Management
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

WASTE MANAGEMENT

WASTE MANAGEMENT OF ILLINOIS
601 Madison Road
E. St. Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

July 3, 2014

Ms. Linda Rosen
USEPA (AE-17J) – Air & Radiation Division
Air Enforcement and Compliance Assurance Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Cottonwood Hills Recycling and Disposal Facility - Site I.D. No. 163075AAL
Request for Higher Operating Temperatures in Landfill Gas Well MW80R

Dear Ms. Rosen:

This letter is written to provide notification that the temperature in landfill gas extraction well MW17 exceeded the 55°C (131°F) temperature limit and to request approval of a higher operating temperature. The temperature variance request is discussed below:

INTRODUCTION

In order to properly operate some wells with a vacuum and to collect sufficient volumes of gas from the wells a higher operating temperature is needed. Typically a vacuum of at least 5 to 10 inches of water (and sometimes more depending on type of waste, well depth, etc) is generally needed to withdraw landfill gas from a well but is based on "tuning" a well to withdraw the maximum amount of gas without compromising the decomposition process and methane generation. The temperature can sometimes be reduced by lowering the well vacuum to a minimal amount (generally less than 0.5 inches of water) but this reduces the amount of landfill gas collected and can increase the possibility of landfill gas not being captured/controlled. Therefore, a higher operating temperature is needed in some wells for increased landfill gas capture/control so that they do not have to be operated at "barely open" or minimal vacuum.

MW80R

Landfill gas extraction well MW80R was installed on August 15, 2012 and subsequently connected to the gas collection header system. The first readings on the gas extraction well were taken on September 20, 2012 and initial readings were below the 55°C (131°F) temperature limit (see attached table) with good gas flows. Gas well temperatures increased during the operation of the well as refuse continued to decompose and generate heat and the well temperature exceeded the 55°C (131°F) temperature limit in January

2014. The well vacuum was adjusted to a minimal vacuum and temperatures dropped below the limit after adjusting however the flow from the well is extremely low (less than 10 cfm) at a low vacuum. In June 2014 the vacuum was increased to try and remove additional landfill gas (increase flow) in order to make sure the facility controls the landfill gas generated. The increase in vacuum increased the temperature in the well so the vacuum was once again reduced to help reduce gas well temperature. CO reading were taken and all CO levels were 50 ppm or less. There not been any smoke, subsidence nor evidence of fire at the well. Therefore, this letter **requests a temperature variance of 143°F be approved** (highest observed temperature) which will allow the facility to properly operate the well with a higher vacuum and to collect a greater volume of landfill gas being generated. At the requested variance it appears the facility can remove approximately 60 cfm of gas for proper control while the reduced vacuum would only allow approximately 10 cfm of gas removed.

We do not believe the elevated gas well temperature with increased vacuum is due to subsurface oxidation since there are no indications of fire, nor smoke, nor subsidence around the wells, nor elevated CO readings. There is also no reason to believe there are any structural problems related to the operation of the well with higher temperatures since oxygen levels in the well are less than 5%.

If you require additional information, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE.
District Engineer

Cc: IEPA-BOA-Compliance and Enforcement Section
1021 North Grand Avenue East
Springfield, Illinois 62702

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW80R

Device ID	Date Time	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW80R	9/20/2012 10:47	43.5	41.4	0.2	-29.0	121	121	-24.0	201	159	
MW80R	10/3/2012 14:32	45.8	41.2	0.0	-20.5	122	122	-13.6	129	76	
MW80R	11/1/2012 9:37	52.9	44.1	0.0	-7.1	122	122	-7.1	72	70	
MW80R	12/11/2012 14:53	56.3	43.0	0.0	-7.4	125	125	-7.4	70	67	
MW80R	1/17/2013 14:03	52.3	42.3	0.1	-7.1	125	125	-7.7	68	70	
MW80R	1/28/2013 13:14	48.0	41.8	0.0	-7.7	125	125	-7.5	78	76	
MW80R	2/22/2013 11:08	47.5	38.3	0.2	-6.1	124	124	-6.1	57	57	
MW80R	3/22/2013 9:57	47.6	39.2	0.2	-6.4	124	125	-6.4	58	58	
MW80R	4/9/2013 10:36	48.0	39.4	0.0	-6.5	125	126	-6.6	64	65	
MW80R	5/2/2013 14:05	50.6	39.5	0.0	-7.0	126	127	-7.0	67	66	
MW80R	6/20/2013 11:59	59.9	39.9	0.1	-7.4	128	128	-8.1	57	66	
MW80R	7/31/2013 13:45	57.6	42.3	0.0	-4.8	127	127	-5.1	37	39	
MW80R	8/8/2013 13:21	57.3	42.6	0.0	-0.2	128	128	-1.0	27	30	
MW80R	8/28/2013 12:08	45.3	32.8	3.0	-0.9	126	126	-0.4	33	25	
MW80R	9/24/2013 13:03	54.0	37.5	1.0	-0.2	128	128	-0.3	24	23	
MW80R	10/2/2013 13:51	50.9	34.0	2.8	-1.0	122	120	-1.0	38	39	
MW80R	11/25/2013 13:53	59.2	40.7	0.0	-0.4	119	127	-0.6		30	
MW80R	12/4/2013 12:42	59.1	40.0	0.1	-0.4	112	113	-0.8	26	22	
MW80R	1/30/2014 10:14	56.3	43.6	0.0	-2.5	128	131	-3.0	27	29	10
MW80R	1/30/2014 10:17	56.8	43.1	0.0	-5.1	132	130	-2.1	31	12	
MW80R	2/25/2014 11:33	58.3	41.6	0.0	-4.9	123	126	-5.9	4	18	
MW80R	3/13/2014 11:39	58.1	41.8	0.0	-1.0	127	128	-1.3	4	16	
MW80R	4/29/2014 12:15	57.0	42.9	0.0	-0.6	128	128	-0.9	8	9	
MW80R	5/27/2014 12:35	57.9	40.0	0.0	-3.0	128	126	-1.9	21	15	
MW80R	6/16/2014 12:24	56.7	42.7	0.0	-4.2	137	140	-1.4	37	10	
MW80R	6/16/2014 12:26	57.3	42.6	0.0	-1.1	140	140	-0.7	8	8	
MW80R	7/1/2014 10:51	58.0	41.9	0.0	-16.4	143	137	-0.2	57	15	50
MW80R	7/1/2014 10:56	56.4	43.5	0.0	-0.2	133	132	-0.1	19	16	50

WASTE MANAGEMENT

WASTE MANAGEMENT
OF ILLINOIS
601 Madison Road
E. St. Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

May 13, 2014

Ms. Sarah Breneman, Chief
USEPA (AE-17J) – Air & Radiation Division
Air Enforcement and Compliance Assurance Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Cottonwood Hills Recycling and Disposal Facility - Site I.D. No. 163075AAL
Request for Alternative Operating Procedure for Landfill Gas Extraction Wells MW07R1 and MW81

Dear Ms. Breneman:

This letter is written to request USEPA approval of an alternative operating procedure for landfill gas extraction wells with low flow due to minimal gas generation in certain areas of the landfill. This procedure would be used as an alternative to decommissioning the wells. This procedure has been previously approved by the USEPA Region 4 (please see attached documentation).

Background

Some areas of a landfill can have low gas generation rates due to factors such as low fill heights, type of waste present such as contaminated soils or other waste streams with minimal decomposable organics that would generate landfill gas. Landfill gas extraction wells installed in areas of the landfill with low gas generation rates are often difficult, if not impossible, to simultaneously operate at a negative pressure and maintain compliance with oxygen concentrations. When gas generation/flow rates are so low that even applying minimal vacuum results in air infiltration that causes exceedences of the applicable oxygen concentration limit of 5%. Shutting such wells down will prevent the air infiltration that causes the oxygen exceedence, but will also likely cause a positive pressure in the well as even minimal gas generation can lead to gas buildup in the well.

Request for Gas Wells MW07R1 and MW81

In lieu of a request to permanently shut down a landfill gas extraction wells as allowed by 40 CFR 60.753(b)(3), this letter requests USEPA approval of an alternative operating procedure for landfill gas extraction wells MW07R1 and MW81 at the Cottonwood Hill Recycling and Disposal Facility. These two wells have minimal gas flow and can easily

cause air infiltration with minimal applied vacuum (see attached data tables). Therefore, the facility requests approval of the following operating procedure:

1. Wells where oxygen concentrations do not decline to acceptable levels after more than one hour or reduced vacuum will be shut off until the gas quality recovers.
2. The monthly monitoring required by 40 CFR 60.755 will be conducted for wells that have been shutdown, but positive pressure or elevated oxygen concentrations will not be considered exceedences of the operating limits in 40 CFR 60.753.
3. If monthly monitoring indicates that pressure has built up in the well and the oxygen concentration still exceeds 5%, the well will be opened to apply vacuum and relieve the pressure and it will be shutdown until it is monitored again the following month.
4. If the monthly monitoring indicates that gas flow and/or quality has improved (ie the oxygen concentration has dropped below 5% with vacuum applied), the well will be brought back online and maintained under vacuum until gas quality declines again.
5. The facility will continue to conduct quarterly surface scans as required under 40 CFR 60.755 including areas with wells using this operating procedure. The standard procedures and remediation steps will be taken for any surface scan readings that exceed 500 ppm.

If you require additional information or have any questions, please call me at (314) 568-2025 or (618) 857-7160.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE.
District Engineer

Cc: IEPA-BOA-Compliance and Enforcement Section
1021 North Grand Avenue East
Springfield, Illinois 62702

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW07R1

Device ID	Date Time	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW07R1	01/07/11 12:42	55.1	39.8	0	-1.2	129	130	-1.7	11	16	
MW07R1	02/15/11 14:13	50.5	37.6	0.2	-3	145	139	-0.7	16	9	< 100
MW07R1	02/23/11 11:33	46.2	36.7	0	-1.1	132	133	-1.1	4	5	
MW07R1	03/04/11 11:35	54.1	38.7	0.4	-0.8	126	126	-0.8	4	6	
MW07R1	04/05/11 10:17	44.8	34.2	0.4	-4.1	126	122	-3.8	6	5	
MW07R1	04/07/11 09:50					145	145				
MW07R1	04/14/11 01:44	50.6	36.3	0	-0.9	125	126	-1.1		8	150
MW07R1	05/13/11 12:46	50.8	36.5	0.2	-2	137	137	-2.1	5	5	
MW07R1	06/16/11 02:09	51.4	37.8	0.5	-0.8	114	116	-1	3	4	
MW07R1	07/20/11 09:18	54.3	37.2	0.3	-1.3	126	131	-0.9	3	6	
MW07R1	08/03/11 10:58	55.4	36.8	0.1	-0.2	113	118	-0.7	9	9	
MW07R1	09/08/11 02:12	49.1	37.4	0.1	-2.3	140	138	-2	5	5	50
MW07R1	10/07/11 10:36	54.2	37.6	0	-0.5	132	132	-0.5	2	3	25
MW07R1	11/03/11 09:50	52.7	39.6	0.1	-0.8	120	132	-1	10	10	
MW07R1	12/08/11 14:04	54.7	40.0	0.0	-2.8	139	138	-2.9	7	6	0
MW07R1	01/27/12 12:21	45.5	35.1	1.2	-7.4	136	135	-7.4	11	12	
MW07R1	02/22/12 12:15	45.1	35.6	0.9	-3.7	138	138	-3.2	8	5	
MW07R1	03/09/12 08:26	46.7	34.6	0.5	-3.7	116	116	-3.8	3	4	
MW07R1	04/18/12 09:18	51.4	38.3	0.0	-1.4	125	124	-1.4	16	17	
MW07R1	05/15/12 11:53	50.9	37.7	0.0	-2.1	130	131	-2.1	2	2	
MW07R1	06/08/12 09:43	50.6	35.5	0.0	-1.6	131	131	-1.6	5	3	
MW07R1	07/26/12 11:52	50.6	33.8	1.7	-3.4	101	104	-3.5	11	11	
MW07R1	08/10/12 12:52	53.6	39.6	0.0	-5.4	135	135	-5.5	2	3	
MW07R1	09/20/12 11:35	48.5	36.7	1.3	-4.6	135	132	-4.4	10	10	
MW07R1	10/08/12 11:56	54.6	39.9	0.0	-1.7	107	108	-1.6	6	6	
MW07R1	11/01/12 08:23	54.4	39.9	0.1	-3.6	110	113	-3.6	3	5	
MW07R1	12/11/12 13:32	54.4	40.6	0.0	-6.4	113	127	-7.0	5	5	
MW07R1	01/28/13 12:37	54.8	40.1	0.1	-6.6	132	131	-6.7	2	5	
MW07R1	02/20/13 14:26	40.2	35.1	2.6	-7.0	123	123	-6.4	3	0	
MW07R1	03/22/13 09:27	53.1	40.6	0.0	-1.9	89	89	-1.9	0	4	
MW07R1	04/09/13 09:08	53.8	40.5	0.0	-2.5	102	103	-2.4	3	4	
MW07R1	05/02/13 12:53	54.4	41.3	0.0	-3.2	112	112	-3.2	3	3	
MW07R1	6/20/2013 10:47	60.4	39.5	0	-2.3	108	108	-2.3	1	1	
MW07R1	7/19/2013 10:32	46.5	37.4	0.5	-3	115	115	-2.4	8	8	
MW07R1	8/8/2013 12:53	54.2	42.1	0	-8.1	98	104	-9	12	14	
MW07R1	9/24/2013 11:47	55.3	42.2	0	-15.7	136	136	-16.6	16	19	
MW07R1	9/24/2013 11:48	55.2	41.7	0	-18.8	137	135	-18.7	20	21	
MW07R1	10/2/2013 13:07	50.9	41.8	0	-20.8	135	129	-11.4	18	2	
MW07R1	10/2/2013 13:09	51.6	42.3	0	-10.7	127	128	-10.6	6	6	
MW07R1	11/25/2013 12:58	57.1	39.8	0.5	-7.3	126	129	-10	12	7	
MW07R1	12/4/2013 11:46	41.7	35.1	2.2	-17.4	129	128	-13.7	15	6	
MW07R1	1/30/2014 10:42	25.6	26.7	6.5	-22.5	137	124	-7.4	29		25
MW07R1	2/11/2014 12:19	42.1	31.1	4.2	-2.2	40	43	-2.4	11	13	
MW07R1	2/25/2014 9:58	43.3	37	1.1	-8.2	66	58	-2.9	6		
MW07R1	3/13/2014 10:15	20.5	18.7	11.7	-19.3	127	103	-7.1	8		
MW07R1	4/1/2014 10:41	38.1	31.5	4.7	-4.6	69	64	-4.3	4	2	

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW81

Device ID	Date Time	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW81	10/3/2012 14:13	46.9	41.5	0.5	-2.2	113	113	-1.7	36	26	
MW81	11/1/2012 8:26	51.8	43.5	0.3	-0.8	114	114	-0.8	14	15	
MW81	12/11/2012 13:37	54.2	43.1	0.1	-0.5	113	114	-0.5	10	10	
MW81	1/28/2013 12:41	55.3	43.9	0.0	-0.2	113	113	-0.2	15	15	
MW81	2/20/2013 14:33	54.4	42.4	0.1	-0.1	106	107	-0.1	11	12	
MW81	3/22/2013 9:32	55.8	41.9	0.1	-0.9	112	112	-0.8	13	13	
MW81	4/9/2013 9:16	56.6	42.0	0.0	-1.1	115	115	-1.4	4	14	
MW81	5/2/2013 12:56	56.9	43.0	0.0	-1.6	117	117	-1.7	23	25	
MW81	6/20/2013 10:52	58.1	41.8	0.0	-2.6	120	120	-2.6	29	28	
MW81	7/19/2013 10:41	53.7	40.2	0.0	-0.2	119	121	-0.3	13	15	
MW81	8/8/2013 13:00	56.1	43.8	0.0	-0.2	118	119	-0.5	24	26	
MW81	9/24/2013 11:52	57.0	41.7	0.0	-0.4	124	125	-0.8	21	26	
MW81	10/2/2013 13:12	55.8	44.1	0.0	-2.6	118	118	-2.8	27	27	
MW81	11/25/2013 13:01	58.3	41.6	0.0	-0.5	115	116	-1.0	26	43	
MW81	12/4/2013 11:50	47.8	40.2	0.2	-4.4	111	111	-4.0	41	36	
MW81	1/30/2014 10:53	29.9	30.3	3.1	-5.0	119	110	-2.0	31		
MW81	2/25/2014 10:12	32.7	28.0	4.8	-15.6	128	127	-11.4	110	72	
MW81	3/13/2014 10:39	4.0	7.7	16.2	-2.6	83	82	-1.3	13	21	
MW81	3/13/2014 10:42	14.3	11.9	14.7	-0.9	64	63	-0.9			
MW81	3/17/2014 14:43	51	37.9	0.9	-1	63	69	-1	8	9	
MW81	4/29/2014 12:42	53.4	40.8	0	-1.3	88	101	-1.7	6	6	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4APT-ATMB

FEB 0 9 2005

L. T. Kozlov, P.E.
Program Administrator
Air Resources Management
Central District
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Dear Mr. Kozlov:

The purpose of this letter is to provide you with a written determination regarding proposed changes to the standard operating procedures for landfill gas extraction wells at the Orange County Solid Waste Management Facility. This landfill is subject to 40 CFR Part 60, Subpart WWW (Standards of Performance for Municipal Solid Waste Landfills), and in a request sent to the U.S. Environmental Protection Agency (EPA) Region 4 and to your agency, Orange County proposed changes in standard operating procedures for certain wells in the landfill's active gas collection system. These changes involve an alternative to decommissioning wells where low landfill gas generation rates make it difficult to simultaneously operate wellheads at negative pressure and maintain compliance with oxygen concentration limits. Based upon our review, the changes proposed by Orange County are acceptable. Details regarding the County's proposal and the basis for our conclusions are provided in the remainder of this letter.

Operating requirements for gas collection and control systems (GCCS) are promulgated at 40 CFR §60.753(b), (c), and (d). Under these provisions, wellheads must be operated under negative pressure, the temperature of interior wellheads must be less than 55 °C, gas quality limits for interior wells (either less than 20 percent nitrogen or less than five percent oxygen) must be met, and the methane concentration at the surface of the landfill must be less than 500 parts per million (ppm). Under provisions in 40 CFR §60.755, monitoring to verify compliance with the wellhead pressure, temperature, and gas quality limits must be conducted on a monthly basis. Monitoring to verify compliance with the 500 ppm surface methane concentration limit must be conducted on a quarterly basis.

Orange County's request for approval of changes to its standard operating procedures involves wells where gas flow rates are so low that applying even minimal vacuum results in air infiltration that causes exceedances of the applicable oxygen concentration limit. Shutting such wells down will prevent the air filtration that leads to the oxygen exceedances, but shutting a well down is likely to cause positive pressure in the wellhead as landfill gas builds up. Therefore, simultaneously complying with both

the negative pressure and oxygen concentration limits in 40 CFR §60.753 can be difficult for wells where gas flow rates have declined over time.

Under provisions in 40 CFR §60.753(b)(3), wells that experience positive pressure after being shutdown to accommodate declining landfill gas flow rates can be decommissioned if permission is granted by the Administrator. As an alternative to decommissioning wells under the provisions, Orange County has proposed to make the following changes to its standard operating procedure for wells where persistent oxygen exceedances are not the result of operations and/or maintenance issues:

1. Wells where oxygen concentrations do not decline to acceptable levels after more than one hour of reduced vacuum will be shut off until the gas quality recovers.

2. The monthly monitoring required by 40 CFR §60.755 will be conducted for wells that have been shutdown, but positive pressure or elevated oxygen concentrations will not be considered exceedances of the operating limits in 40 CFR §60.753.

3. If monthly monitoring indicates that pressure has built up in the well and the oxygen concentration still exceeds five percent, the well will be opened to relieve the pressure and will be shutdown until it is monitored the following month.

4. If the monthly monitoring indicates that gas quality has improved (i.e., the oxygen concentration has dropped below five percent), the well will be brought back on line until the gas quality declines again.

5. The quarterly methane surface concentration monitoring required under 40 CFR §60.755 will be conducted for wells that have been shutdown. Standard remediation steps, including evaluating the need to return wells to full-time service, will be followed if exceedances of the 500 ppm methane surface concentration limit are detected.

According to Mr. Daniel Morical of Orange County Utilities, the operating procedure changes outlined above would apply to approximately four or five of the 130 wells at its landfill at any one time. Mr. Morical also indicated that there is a high probability of gas quality improving to the point it would be necessary to restart wells that had been shutdown. Based upon our review, the proposed changes to Orange County's standard operating procedures are acceptable because shutting down nonproductive wells, instead of decommissioning them, has the potential to lower overall nonmethane organic compound (NMOC) emissions at the landfill. This potential increase in NMOC control system efficiency stems from the ability to quickly resume gas collection if there are improvements in the gas quality or increases in the gas production rate in an area of the landfill where wells have become nonproductive. If wells in a nonproductive area are decommissioned, instead of merely being shutdown, NMOC

emissions would not be controlled between the time an exceedance is identified and a new well is installed. One condition for approval of the proposed changes in standard operating procedures at the Orange County Solid Waste Management Facility is that facility diagrams must be updated to indicate which wells have been shutdown because landfill gas production rates are too low to permit continuous extraction.

If you have any questions about the determination provided in this letter, please contact Mr. David McNeal of the EPA Region 4 staff at (404) 562-9102.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides and Toxics
Management Division

cc: Daniel Morical
Orange County Utilities – Solid Waste Division
5901 Young Pine Road
Orlando, Florida 32829

Environmental Consultants

3012 U.S. Highway 30 North
Suite 700
Tampa, FL 33619-2242

813 621-0080
FAX 813 623-6757

SCS ENGINEERS

November 9, 2004
File No. 09199036.17

Mr. Dan Morrical, P.E.
Orange County Solid Waste Division
5901 Young Pine Road
Orlando, Florida 32829

Subject: Addendum to the Gas Collection and Control System Design Plan
Standard Operating Procedure for Landfill Gas Extraction Wells
Orange County Solid Waste Management Facility, Orange County, Florida
FDEP Permit No. 0950113-002-AV

Dear Dan:

SCS Engineers (SCS) is providing you this letter for your use in petitioning the United States Environmental Protection Agency (U.S. EPA) to amend the landfill gas collection and control system (GCCS) design plan for the Orange County Solid Waste Management Facility. A similar letter was previously sent to Orange County on December 30, 2003, which was subsequently forwarded to the Florida Department of Environmental Protection (FDEP) Central District office. FDEP recently stated that they did not have the regulatory authority to approve the proposed actions included in this request, and recommended that the County forward the following proposed standard operating procedures to U.S. EPA for their approval.

As you know, in accordance with the New Source Performance Standards (NSPS) for municipal solid waste landfills, Orange County is required to operate each landfill gas (LFG) extraction well in compliance with certain criteria. Per Title 40 of the Code of Federal Regulations (CFR) Part 60.753(b), (c), and (d), Orange County is required to:

- Operate the collection system with negative pressure at each wellhead except under certain conditions such as increased well temperature, when a geomembrane cap is installed and an acceptable pressure limit is specified in the GCCS design plan, or when a landfill fire is present.

- Operate each wellhead with a LFG temperature less than 55 degrees Celsius (131 degrees Fahrenheit) and either a nitrogen level less than 20 percent or an oxygen concentration less than 5 percent by volume.

- Operate the GCCS so that the methane concentration at the surface of the landfill is less than 500 parts per million by volume (ppmv).

The first and third criteria listed above were included in the NSPS by the U.S. EPA in order to require landfill owners/operators to minimize fugitive emissions of LFG to the atmosphere. The second criterion, which is related to oxygen and nitrogen concentration in the gas at each well, is based on historical LFG industry operations and maintenance guidelines aimed at

reducing the potential for landfill fires or negatively affecting microbes involved in the anaerobic decomposition of the waste. High oxygen concentrations can occur due to operating the wellfield too aggressively, resulting in the infiltration of ambient air through the cover soils. If the oxygen concentration within a landfill exceeds five percent by volume, the possibility of a landfill fire is greatly enhanced. Note that because most field instruments measure oxygen, and not nitrogen, the method of compliance typically is based on a five percent oxygen concentration, rather than the 20 percent nitrogen requirement at each wellhead.

Unfortunately, the Rule does not provide guidance on how to address an individual criterion when it has the potential to conflict with one of the other criteria. For example, in some situations it may not be possible to maintain compliance with both the vacuum and gas quality requirements of the NSPS. This may be true in the case of a low or diminishing LFG generation rate, when the application of even a small vacuum (i.e., 0.1 to 0.5 inches of water column (in-w.c.)) to a well or collector may cause the oxygen concentration to exceed the NSPS limit of five percent. This typically occurs because LFG is not being generated at a sufficient rate to allow for continuous extraction by the GCCS.

If the LFG generation rate is so low, applying vacuum typically will only worsen the gas quality (i.e., increase the oxygen content), resulting in continued oxygen exceedances. One approach to remedying this situation is to shut down the well for a period of time until gas quality improves and the oxygen concentration declines to below five percent. Once the oxygen concentration is below this level, the well can be reopened and LFG extraction resumed. However, because this approach requires a non-negative pressure at the wellhead, this technique is not compliant with the NSPS.

Therefore, if gas quality cannot be maintained, the only alternative allowed by the NSPS is to decommission the well, provided there are no exceedances of the surface emissions monitoring limit. While such wells could be decommissioned, SCS feels it would be better to leave them in place in case future conditions render them necessary.

PROPOSED STANDARD OPERATING PROCEDURE

SCS proposes to establish the following standard operating procedure for wells at which poor gas quality is consistently recorded despite the application of minimal vacuum (i.e., less than 0.5 in-w.c.). This standard operating procedure is proposed as an addendum to the existing GCCS design plans for the site. It is not intended for wells at which normal wellfield tuning, maintenance, or repair activities can remediate the exceedances.

For wells at which oxygen exceedances are persistent and not the result of operations and/or maintenance issues, the wellhead valve will be adjusted to minimize vacuum. If after more than one hour of decreased vacuum the oxygen concentration does not decline to allowable levels, the wellhead will be shut off until the gas quality recovers. The well will continue to be monitored on a monthly basis, and the wellhead valve opened to purge any accumulated gas

and relieve any pressure that may have developed. If, during the routine monthly monitoring, the oxygen concentration is below five percent, the well will be brought back on line until the gas quality again declines.

Gas concentration and pressure will continue to be monitored and recorded during the months in which the wells are shut off. However, a zero pressure or high oxygen concentration will not be considered an exceedance of the wellhead operating criteria included in 40 CFR 60.753(b) and (c), and remedial actions including rechecks will not be required. If a positive pressure is recorded, the well will be reopened to relieve any pressure and to purge the accumulated gas from the well. If the gas quality has improved, the well will be opened and returned to service. However, if high oxygen concentrations are still present in the well, after purging the well and removing any positive pressure, the wellhead valve will again be closed and the well will not be monitored until the next round of monthly monitoring. Quarterly surface emissions monitoring will continue to be used to demonstrate the effective capture and control of LFG from the landfill. In the case of exceedance of the 500-ppmv surface emissions monitoring limit, standard remediation steps will be conducted, including evaluating the need for returning the well to full-time service.

Note that wells under this standard operating procedure will not be physically disconnected from the GCCS, which will allow the County to quickly return the wells to service if the need arises. In the future, if wells are to be permanently decommissioned, the County will submit a formal notice of well decommissioning to FDEP.

Please forward this proposed standard operating procedure/addendum to the GCCS design plan to the U.S. EPA at the following address:

Air Resources Management
United States Environmental Protection Agency, Region
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-3104

Please copy the FDEP Central District office at the following address:

Air Resources Management
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

ATTACHMENT 3

WASTE MANAGEMENT

WASTE MANAGEMENT
OF ILLINOIS
601 Madison Road
E. St. Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

June 2, 2014

Illinois Environmental Protection Agency
Bureau of Land – Planning and Reporting
1021 North Grand Avenue East
Springfield, Ill 62702

1630755017 – St. Clair County
Cottonwood Hills Recycling and Disposal Facility

Submittal of Gas Well Log for MW03R

Dear Sirs:

This letter transmits the gas well installation log for MW03R at the above referenced facility.

If you have any questions, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE
District Engineer

WEAVER
BOOS
CONSULTANTS

June 2, 2014
Project No. 0086-440-10-07

Mr. Ernest H. Dennison, P.E.
Waste Management of Illinois, Inc.
601 Madison Road
East St. Louis, Illinois 62201

Re: Vertical Gas Well Construction Diagrams
Cottonwood Hills Recycling and Disposal Facility – (IEPA Site No. 1630755017)
Marissa, Illinois

Dear Mr. Dennison:

We have attached the drilling log and gas well construction diagram for the gas extraction well installed at Cottonwood Hills Recycling and Disposal Facility on May 30, 2014. The construction details for gas well MW03R are shown on the attached diagram.

We appreciate the opportunity to be of service and we look forward to working with you again.

Sincerely,

Weaver Boos Consultants North Central, LLC

Joshua Allen
Project Manager

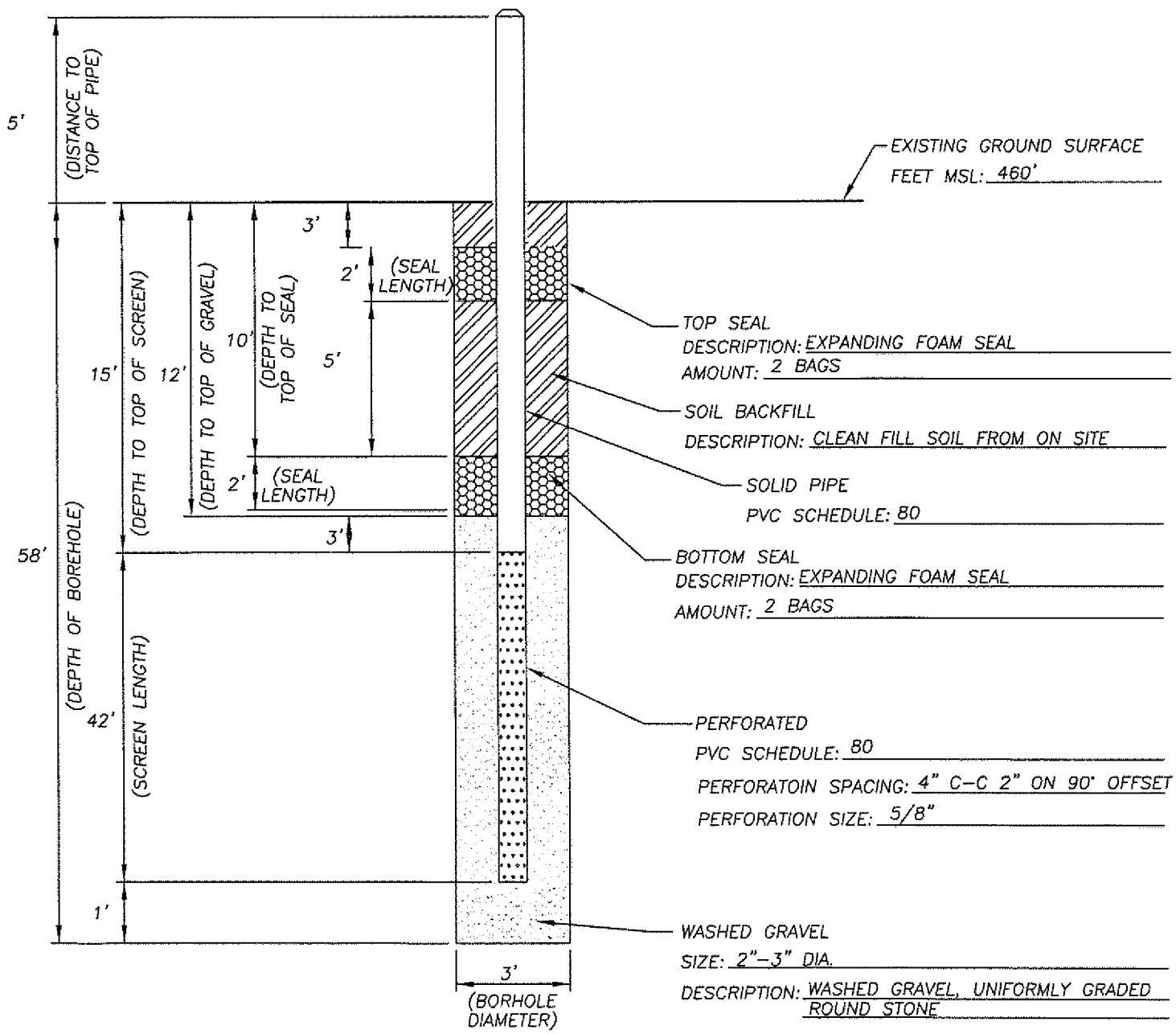
Andrew J. Limmer
Senior Project Manager

Enclosures: 2014 GCCS Well Drilling Summary and 2014 GCCS Construction Diagram.

GAS WELL CONSTRUCTION DIAGRAM

PROJECT NUMBER: 0086-440-10-07
PROJECT NAME: COTTONWOOD HILLS 2014 GCCS CQA
GAS WELL NO.: MW03R
WELL LOCATION: 611179E 580207N
INSTALLATION START DATE: 5/30/14
COMPLETION DATE: 5/30/14
DRILLER: COLEMAN AND SON
INSPECTOR: JACOB ALLEN

COMMENTS: DRILLING TERMINATED AT DRILL DEPTH OF 58'.



WM01560

ATTACHMENT 4

COTTONWOOD HILLS GAS COLLECTION SYSTEM
REPORTING FOR NON OPERATING PERIODS OF CONTROL DEVICE
3000 SCFM OPEN FLARE

Time Out of Service	Description of Outage	Time Back In Service	Down Time Hours	Performed By
1/6/14 2:06 AM	Blower and Auto valve froze	1/8/14 12:36 PM	58.5	MM
1/17/14 3:26 PM	Ran out of Nitrogen	1/17/14 5:20 PM	1.9	MM
3/12/14 2:14 PM	Auto-restart	3/12/14 2:28 PM	0.2	MM
5/22/14 10:54 AM	Auto-restart	5/22/14 11:20 AM	0.4	MM
5/26/14 4:20 PM	Utility power loss	5/26/14 5:54 PM	1.6	MM
6/18/14 10:40 AM	Vibration analysis and Elecrtical work by BRI	6/18/14 11:46 AM	1.1	MM
		TOTAL	63.7	

Per Sec. 60.757 : "Each owner or operator...shall include the following information with the annual report... description and duration of all periods when the control device was not operating for a period exceeding one hour and length of time the control device was not operating."

Verified by :
Mike McElvain Gas Technician

WM01562

ATTACHMENT 5

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
QUARTERLY SURFACE SCAN MONITORING EXCEEDENCES
FOR JANUARY 1, 2014 TO JUNE 30, 2014 REPORT PERIOD

Quarter	Date	Location		Methane Conc ppm	Corrective Action	Date	Methane Conc ppm	Additional Corrective Action	Date	Methane Conc ppm
		North	West							
1st	03/13/14			All < 150	None Required			NA		
2nd	06/02/14			All < 200	None Required			NA		